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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,654	11/15/2001	Hiroshi Tanaka	Q66556	7456

7590 10/07/2002

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EXAMINER
HO, ALLEN C

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 10/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/987,654	TANAKA ET AL
	Examiner	Art Unit
	Allen C. Ho	2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s) _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: PORTABLE RADIATION IMAGING SYSTEM AND A RADIATION IMAGE DETECTION DEVICE EQUIPPED WITH AN ANGULAR SIGNAL OUTPUT MEANS.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 1. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polkus *et al.* (U. S. Patent No. 6,439,769 B1).

Polkus *et al.* disclosed a radiation imaging system comprising: a radiation source (**110**); a two-dimensional radiation image detection device (**150**) equipped with an angular signal output means (column 7, lines 31-34) that outputs an angular signal which represents the degree of tilt of the radiation emitted from the radiation source in relation to the detection surface of the image detection device; a tilt adjustment means that adjusts the tilt of the radiation in relation to the detection surface of the radiation image detection device to become substantially perpendicular by changing the tilt angle of the radiation image detection device based on the angular signal output from the angular signal output means (column 7, lines 36-48); shift means (**140**) that enables horizontal movement of the radiation source; and shift means (column 5, lines 43-45) that enables horizontal movement of the radiation image detection device.

However, Polkus *et al.* did not teach that: (1) this radiation imaging system is portable; (2) the tilt adjustment means that changes the tilt angle of the radiation source based on the angular signal output from the angular signal output means; and (3) a command means that generates an exposure command to the radiation source when the tilt of the radiation to be emitted from the radiation in relation to the detection surface of the radiation image detection device is substantially perpendicular.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to: (1) make this system portable, since a person would be motivated to employ this radiation imaging system in order to diagnose a patient in a remote location; (2) change the tilt angle of the radiation source based on the angular signal output from the angular signal output means, since a person in the art would recognize that changing the tilt angle of the radiation source is completely equivalent to changing the tilt angle of the radiation image

detection device as long as the radiation source and the radiation image detection device are aligned; and (3) provide a command means that generates an exposure command to the radiation source when the tilt of the radiation to be emitted from the radiation in relation to the detection surface of the radiation image detection device is substantially perpendicular, since a person would be motivated to automate the imaging process by providing a means to signal the system when the alignment process is complete.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burdea *et al.* (U. S. Patent No. 5,113,424).

Burdea *et al.* disclosed a radiation imaging system comprising: a radiation source (**240**); a two-dimensional radiation image detection device (**14**) equipped with an angular signal output means (**16**) that outputs an angular signal which represents the degree of tilt of the radiation emitted from the radiation source in relation to the detection surface of the image detection device; a tilt adjustment means (**62**, **66**, **70**, **71**) that adjusts the tilt of the radiation in relation to the detection surface of the radiation image detection device to become substantially perpendicular by changing the tilt angle of the radiation source based on the angular signal output from the angular signal output means; shift means (**62**, **66**, **70**, **71**) that enables horizontal movement of the radiation source.

However, Burdea *et al.* did not teach that: (1) this radiation imaging system is portable; (2) the tilt adjustment means that changes the tilt angle of the radiation image detection device based on the angular signal output from the angular signal output means; and (3) a command means that generates an exposure command to the radiation source when the tilt of the radiation

to be emitted from the radiation in relation to the detection surface of the radiation image detection device is substantially perpendicular.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to: (1) make this system portable, since a person would be motivated to employ this radiation imaging system in order to diagnose a patient in a remote location; (2) change the tilt angle of the radiation image detection device based on the angular signal output from the angular signal output means, since a person in the art would recognize that changing the tilt angle of the radiation image detection device is completely equivalent to changing the tilt angle of the radiation source as long as the radiation source and the radiation image detection device are aligned; and (3) provide a command means that generates an exposure command to the radiation source when the tilt of the radiation to be emitted from the radiation in relation to the detection surface of the radiation image detection device is substantially perpendicular, since a person would be motivated to automate the imaging process by providing a means to signal the system when the alignment process is complete.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) Betz *et al.* (U. S. Patent No. 6,435,715 B1) describe a radiography device.

(2) Dwyer, Jr. *et al.* (U. S. Patent No. 6,302,580 B1) describe an apparatus for solid state digital imager tracking radiography.

(3) Negrelli (U. S. Patent No. 6,200,024 B1) describes a virtual C-arm robotic positioning system.

(4) Palm-Plessmann *et al.* (U. S. Patent No. 5,940,470) describe a medical x-ray system.

(5) Khutoryansky *et al.* (U. S. Patent No. 5,734,694) describe a universal radiographic room.

(6) Kresse (U. S. Patent No. 4,894,855) describes an x-ray diagnostic system.

(7) LaFiandra *et al.* (U. S. Patent No. 4,617,681) describe a bistable aligner cartridge foot.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (703) 308-6189. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached at (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Allen C. Ho
Examiner
Art Unit 2882

ROBERT H. KIM
SUPERVISORY PATENT EXAMINER

ACH
September 30, 2002